

INSTRUCTIONAL DESIGN GROUP ASSIGNMENT

University of Trinidad and Tobago

School for Studies in learning Cognition and Education

IDES210E-INSTRUCTIONAL DESIGN

MEMBERS OF GROUP:

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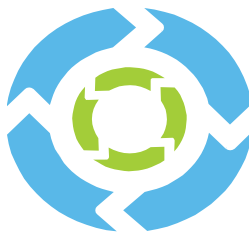
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ASSIGNMENT DUE DATE – THURSDAY 7TH JULY 2011

ASSIGNMENT 2

LECTURER- MISS LESHA ROBERTS



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INTRODUCTION

Instructional Design models can be defined as a framework for developing modules or lessons that are focused on increasing or enhancing the possibility of learning. It also encourages the engagement of learners so that they can gain a deeper level of understanding. An instructional design model is specific in nature and mostly focuses on the design process phase. The purpose of the Instructional Design Process is to identify the outcomes of the instruction, to guide the developing of instructional content (scope and sequence) and to establish how instructional effectiveness will be evaluated.

‘Lately, there has been some movement to call Instructional Design- *Learning Design* with the hope that this will focus the process more on the learners rather than the design or platform. However, this has been criticized by others as we cannot design learning because it is an outcome, rather we can only design the instruction, which is a process.’

The aim of this assignment is to design a unit comprising of lessons by which instruction is designed to improve understanding through the analysis of their learning needs. The instruction will be designed to use technology and multimedia to enhance delivery of the instruction.

Needs Analysis and instructional problem

Scenario

Science: *Hard and Soft Water*

At St. Joseph Government Primary School Miss Corbie had the task of teaching her standard four (4) class the concept of hard and soft water. She usually conducts her science classes the period just after lunch however after two separate attempts one on Tuesday and one on Thursday she realized that the students were not able to answer the evaluation questions.

The students' inability to understand the concept of hard and soft water concerned Miss Corbie greatly and as a result she decided to trouble shoot the problem to find out why the students performed so poorly on the evaluation. After this preliminary assessment she realized that she needed to do a more comprehensive analysis. However before getting started she brought the information to the attention of the Principal and together they decided a Needs Analysis has to be carried out.

Purpose: The purpose of the "Needs Analysis" is to determine why Miss. Corbie's standard four class cannot understand the concept of hard and soft water.

Process: This was achieved by observation of the class performance.

Audience- Miss Corbie's Standard four students

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Data Collection: The data collection strategy used was observation. Miss. Corbie observed that her students were unable to understand the concept of hard and soft water after she evaluated them on the topic.

Result: The students needed to know the concept of hard and soft water. They also need to appreciate the differences as well as the benefits of hard and soft water.

Action: It was concluded that the best course of action for Miss Corbie to take in order for the students to develop a better understanding and appreciation for identifying the differences between hard and soft water was for her to re- teach the topic a lab setting. The topic would be taught using the constructivist approach. The teaching strategies would incorporate hands-on activities, real-world examples from the environment and group work.

Instructional Problem Statement (IPS):-

Students are not able to distinguish the differences between hard and soft water. They are unable to identify the different types of water in the environment and state its importance. This course is designed to provide students with the necessary information and skills needed to identify the different types of water in the environment and other context stating its' benefits.

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Contextual Analysis Report

Contextual Analysis is an analysis of the context in which learning will take place. This stage comprises of two parts, learner characteristics and environment analysis.

- **Learner Characteristics**

Learner characteristics are those things which every learner has, but which may not be common to all learners for example gender, age, experience, education and ethnicity. Whether the differences between learners are based on gender, age, education, cultural differences, or on learning styles, providing for the need for the needs of all potential learners means making changes in the design of the program to reflect those learners' needs. Some of the learners' characteristics that crucial for this instructional problem are:

- **Audience**



General Characteristics- refers to those things which every learner has.

Some of the general characteristics of the learner are:-

Age- The learners are students of a standard four class between the ages of ten (10) to twelve (12) years old.

Gender- The learners are both male and female student.


Education- The learners are expected to have successfully completed standard three (3) and would have acquired the basic knowledge of mixtures and particles in water.




Entry Competencies- refers to those pre-requisite skills and attitudes that learners must poses to benefit from the lessons. Some of the skills and attitudes that the learners poses are:-

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- Learners must know how to measure using a ruler
- Learners must know how to record information from experiments
- Learners must know the different uses of the various apparatuses in the lab

 *Academic Background-* The academic background refers to the learners' academic achievement. The academic background that the learner must possess for this lesson is:-

Learners must have successfully completed standard three science curriculum.

 *Social characteristics-* refer to important characteristics that learners must possess to facilitate learning the process of the lesson. Learners must be:-


- Willing to work in groups with other members
- Enthusiastic and eager to learn. The topic of hard and soft water can be confusing, so learners must be eager and willing because engaging in experiments can be fun.

 *Learning styles-* each person prefers different learning styles and techniques. In this unit each should cater for the different learning styles so that learning can be effective. For this lesson the learning style that would be adapted is:-


- Collaborative Learning Approach- this approach involves groups of learners working together to solve a problem, complete a task, or create a product. Collaborative learning is based on the idea that learning is a naturally social act in which the participants talk among themselves. It is through talk that learning occurs. By allowing students to work collaboratively they can construct a better understanding of hard and soft water and its relation in the environment.

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- ***Environment-*** this refers to the possible or probable effects and conditions affecting the learners. This deals with the immediate surroundings in which the learners are being taught.


 ***Orienting context-*** refers to the innate conditions that may affect the learners learning.

- Learners Goals- will need to know the differences between hard and soft water and must be able to identify them in everyday life. Learners will need to master the concept of hard and soft water in order to apply its rationale to support the theory why some objects float or sink in different types of water.
- Learners' perception of utility- learners will be able to successfully master the concept of hard and soft water and identify the different types when they are presented in the environment. They must also be able to select the best type of water when engaging in day to day activities.
- Learners' perception of accountability- learners need to master the concept of hard and soft water so that they can successfully recognize the use of hard and soft water in their environment and increase performance in their exams, since they are accountable to their teachers and parents.

 ***Instructional Content-*** refers to the physical facilities and infrastructure that is needed for the learner and the delivery of the lesson. For the delivery of the lesson of hard and soft water the following amenities are necessary:-

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- Proper lighting- it is important to ensure that the classroom is well light.
- Accommodation- it is important to ensure that the classroom is well ventilated and cool creating a comfortable learning environment.
- Seating arrangement- arrange desks and seats to make allowances for group work and clear view of the board and demonstrations.
- Equipment- ensure sufficient materials and apparatuses for all students, computer projector.

 *Transfer Context*- refers to knowledge and skills that learners have attained and being able to apply this knowledge to new situation. The factors that facilitate transfer of context re:-

- Tools and recourses- The learner will be exposed to real life examples of hard and soft water so that they can actually see what hard and soft water there are in the environment and their uses. Learners will be exposed to sample from different sources. They will also work in groups to change hard water to soft water and vice versa.
- Opportunity- Learners will be provided with lab sheets and real world examples to apply their knowledge of hard and soft water. The knowledge gained from this lesson would be transferred to the home when using different types of water.
- *Support*- The teacher will be there to motivate and encourage the learner in their application of the new knowledge. Support will also be encouraged by fellow colleges in the class.

CONTENT ANALYSIS

Context analysis is done for learners to achieve mastery of the subject matter. It consists of facts, concepts, principles or rules and procedures.

Facts


A *fact* is an association between two things. Learning a fact requires only the memorization and recollection of the fact.

- Hard water is rain water
- Hard water consists of minerals e.g. calcium
- Water that does not make plenty of soap suds easily is called hard water
- Soft water is best for washing hands.
- Soft water is treated water.
- Water that makes plenty of soap suds is called soft water
- Soft water forms more lather using little amount of soap.
- Pure water exists only in a lab


Concepts are categories used in grouping similar or related items.

- Soft water is best for washing hands
- Salt water is good for swimming
- Hard water causes problems in pipes

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 **Principles** or rules are the relationships between concepts.

- Students must know what is acceptable behavior in the lab
- Allow students to explain if it was easy or difficult to wash the soap off their hand
- Identify the differences between hard and soft water
- Students are required to measure the amount of water remaining in the jars
- Students are required to write down their observations in their lab books

 **Procedures** are a sequence of steps that you follow to achieve your goals.

- Instruct students to wash their hands with specified water
- Arrange students in groups four
- Allow children to share materials provided in an orderly manner
- Allow students use materials to conduct experiment.
- Allow students to determine how much water remained in each water sample
- Classification water samples into hard and soft water.
- Allow students to record their findings.

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UNIT PLAN

Unit Plan School: St. Joseph Government Primary School

Subject: Science Strand: Matter and Materials Teacher: Miss Ann Corbie

General Objectives:

The course seeks to:

-  Conduct experiments independently
-  Differentiate between hard and soft water
-  Understand the properties of water
-  Appreciate the physical properties of materials

Topic	Teaching Strategies	Pupil Activities	Theoretical Connection	Resources	Evaluation	Curriculum Integration
Making Different types of water	Experiment Discussion, Group Activity, Lecture, Questioning	Questioning Observation listening Collect Data, Investigate Recording, Write	Linking Old Knowledge with new Knowledge, Scaffolding and group discussions Observation	Jars. Epsom salt, Tap water, salt, rain water, distilled water, river water, Chalk filings	Oral, Group task and presentation ,	Mathematics
Differences between hard and soft water	Discussions, Use of ICT, Experiment Group activity, Questioning Lecturing	Questioning Listening, Investigate, collect data and record, solve problems	Linking Old Knowledge with new Knowledge, Scaffolding and group discussions Observation Rewards and reinforcement	Computer Multi-media projector Liquid soap Water sample in jars from different sources Paper towels Ruler	Questioning and game quiz,	Creative writing

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The properties of hard and soft water	Discussions, Use of ICT, Group activity, Questioning Lecturing	Questioning Listening, Reading collect data and record, solve problems	Linking Old Knowledge with new Knowledge, Scaffolding Rewards and reinforcement	Book, Computer Multi-media projector, White board and markers	Written test and oral questioning	Language Arts, Creative writing
How object react in different types of water	Experiment Discussion, Group Activity, Lecture, Questioning	Questioning Observation listening Collect Data, Investigate Recording, Write	Linking Old Knowledge with new Knowledge, Scaffolding and group discussions Observation	Jars. Tap water, salt water, rain water, river water, paper clip, crayon, leaf, pencil shaving, nail, rubber band, marbles, stone,	Oral, Group task and presentation	Mathematic s, Language Arts, Creative writing
Reinforcement Lesson	Discussions, Use of ICT, Group activity, Questioning Lecturing	Questioning Listening, Reading collect data and record, solve problems	Linking Old Knowledge with new Knowledge, Scaffolding Maslow's need of learning	Book, Computer Multi-media projector, White board and markers	Journal writing	Creative writing

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LESSON PLAN

SCHOOL: St. Joseph Government Primary School.

TEACHER'S NAME: Miss Corbie

DATE: Friday, 8th July, 2011.

SUBJECT: Science.

STRAND: Matter and Materials.

TOPIC: The differences between Hard and soft water.

LESSON: What is hard and soft water?

TERM: 2

CLASS: Standard 4

DURATION OF LESSON: 30 minutes

AGE RANGE: 10 – 12 years.

AVERAGE: 11 years.

NO. IN CLASS: 24 students.

NO. PRESENT: 25 students.

PREVIOUS KNOWLEDGE:

- Pupils have experience at home making lather with soap.
- Some students know that rain water makes a lot of lather and takes a long time to wash away the lather.
- Students have studied the water cycle.
- They can measure lengths
- Students can use a ruler

Key concepts- Hard water

Soft water

Lather

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OBJECTIVES

At the end of the lesson students will be able to:

Cognitive Domain

Identify the differences between hard and soft water.

Predict the reaction of soap in fresh and salt water.

Record and interpret data collected from the experiment.

Psychomotor Domain

Measure and record the amount of remaining water in the jars

Conduct experiments to show how water different water samples react when soap is added to them.

Affective Domain

Select the best water for washing hands.

Determine which water sample makes the most lather

RESOURCES

- Computer
- Multi-media projector
- Liquid soap
- Water sample in jars from different sources
- Paper towels
- Ruler

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METHODOLOGY

KNOWLEDGE OR CONTENT	TEACHER'S STRATEGIES The teacher will:	STUDENTS' ACTIVITY The students will:
Section 1 Introduction	<p>1. Instruct all the students to wash their hands with soap and water that she provided before going to their seats.</p> <p>2. After this was done the teacher then asked them if they found it difficult to wash the soap off or was it easy and why?</p>	<p>1. Wash their hands with soap and water before going to their seats.</p> <p>2. Respond to the questions posed by the teacher</p>
Section 2	<p>1. Place students into groups and give them a bottle of liquid soap and four different samples of water (tap, salt, rain, and river water). She then asks them to wet their hands and place a drop of the soap on them and rub together for one minute. Afterwards they will rinse their hands with the first water sample.</p> <p>2. This will be repeated for the other three water samples</p> <p>3. Then ask each group to measure how much water from each sample remained after they washed their hands</p>	<p>1. Wet their hands with water and place a drop of liquid soap then rub together and rinse with the first water sample.</p> <p>2. They will then repeat the process for the other three water samples</p> <p>3. Then measure and record their findings</p>
Section 3	<p>1. Teach them the concept and differences between hard and soft water using a powerpoint presentation</p> <p>2. Also use a video</p>	<p>1. Follow along and ask questions about the concept and differences between hard and soft water</p> <p>2. Watch the video and make</p>

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	presentation to demonstrate the differences between hard and soft water	notes
Closure	Recaps the key concepts of the lessons	
Evaluation	Use Jeopardy game to evaluate the students knowledge	Answer the questions in their groups being ask by the teacher for points
Appraisal	The principal will appraise the lesson	

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Implementation plan

This plan gives you an idea of all that needs to be done in order for implementation to be successful.

Date – Friday 8th July, 2011.

Time – 12:30pm.

Scheduling – Since the lesson is being taught to standard four students, the schedule will be pre-designed so that classes will already be in place.

Equipments – Computer, internet, and multimedia projector.

Materials – Pen, pencil, notebook, rulers, glass gars, water samples, paper towels and liquid soap.

Facility – Students will be accommodated in the school's lab. Comfortable seating where tables and chairs can easily be moved around to facilitate group activities.

1. Prepare 25 copies of true/false exercise.
2. Ensure the lab is arranged appropriately for the activities.
3. Make the necessary reservation of multi-media equipment for lesson.
4. Collect water sample from different water sources.
5. Prepare sufficient water sample, soap powder, ruler, and paper towels for each student to use.

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Evaluation plan

From the different water samples, students are required to categorize them into their respective group within seven (5) minutes. Students will then be ask to complete a true/flase exercise based on what was taught.

Materials for one (1) lesson containing technology generated Materials

<http://www.zunal.com/webquest.php?w=107134>

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CONCLUSION

In concluding this assignment, the members of our group, Telikah Phillip and Kamela Belidon would all like to say that it was indeed a rewarding experience. It was rather time consuming, painstakingly long, however, we persevered and now we have come to an end.

We do hope that it is in line with what is expected.

We really learnt a lot and were grateful for this opportunity to design instruction so that now we have a better understanding about instructional designing of lessons. We definitely plan to use in the future if the need should arise. However, the knowledge gained from this experience will be used in designing our lessons on a daily basis.